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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

AMINI, JAVID A

ART UNIT	PAPER NUMBER
2672	13

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/538,339

Applicant(s)

NANBA ET AL.

Examiner

Javid A Amini

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☒ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 03, 2004 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 15-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshinori Kuno, et. al., U.S. Patent 5,467,102 (hereinafter, referred to as "Kuno") in view of Yoon Seok Song, et. al., U.S. Patent 5,777,611 (hereinafter, referred to as "Song"), and further in view of Yamazaki et. al. U.S. Patent 6,266,113 B1 (hereinafter referred to as Yamazaki).

1. Claim 15.

An information display device comprising: a display which is driven by a voltage applied thereto and which has a memory effect; (Examiner interpretation for a memory effect: The term "memory" basically is described as the battery "remembers" its usual discharge point and superficially "needs" a charge whenever it hits that point. In other words, if you have a NiCd that always gets discharged to only 50% of its capacity, it will eventually not run below that 50% mark if you ever wanted to discharge it to a lower point). Kuno discloses an information display device (Figures 1, 3 and 11) comprising a display section (Fig. 1, Item 100) which displays

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information stored in a storage medium (Fig. 3, Item 14a); a slot which enables a storage medium to be inserted in and ejected from the information display device, the storage medium being stored with image data to be displayed on the display; Kuno in fig. 1 items 20-22 illustrates slots which enable storage medium to be inserted and ejected; a storage medium driving circuit for reading the image data from the storage medium set in the slot; Kuno in fig. 3 items 13b, 14 and 14a illustrates an internal memory for storing the image data read from the storage medium; the step of a display driving circuit for driving the display by applying a voltage in accordance with the image data stored in the internal memory; is obvious because every display or display-controller requires certain amount of voltage (i.e. the source of power) to trigger electronic elements. A driving section (Fig. 3, Item 13a) which drives the display section to write information thereon: another driving section (Fig. 3, Item 13b) which drives the storage medium to read information from the storage medium. A power source section (Fig. 11, Item 30) which supplies electric power to the driving sections, a power source section for supplying electric power to the display driving circuit and the storage medium driving circuit; and the step of a control section which inhibits the display driving circuit and the storage medium driving circuit, respectively, from performing a display updating operation and from performing an image data reading operation simultaneously, the display updating operation being performed by application of a driving pulse voltage including a reset pulse voltage for resetting a previously displayed image is obvious because Similarly, display monitors must be refreshed many times per second. The *refresh rate* for a monitor is measured in hertz (Hz) and is also called the *vertical frequency*; *vertical scans rate*, *frame rate* or *vertical refresh rate*. The old standard for monitor refresh rates was 60Hz, but a new standard developed by VESA sets the refresh rate at 75Hz for monitors

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displaying resolutions of 640x480 or greater. This means that the display updating operation, while performing an image data reading operation simultaneously. The Kuno reference discloses most of the features of the presently claimed information display device, but lacks full disclosure of a "reset pulse voltage", which for resetting a previously display image. However, when considering what is taught in Kuno in view of the teachings found in Song, it would have been obvious to one skilled in the art at the time of the invention to combine them. The Song reference discloses a reset signal (Figure 3) (as applicant refers to reset pulse) that inhibits the other driving section (Item 15) from driving a storage medium while the driving section (Item 14) performs a reset operation of the display section (Item 34). It should be understood that the items denoted on Figure 3 as the "first power enable signal" and "second power enable signal" (Items 14 & 15, respectively) may, be applied so as to enable operations such as: driving a storage medium, driving a display section or for resetting purposes. It should also be noted that a power sequence controller (Item 11) generates a control enable signal, which is an input to the display section (Item 34). Via its circuitry, the signal provides a means for controlling the display section (Item 34), which is responsive to an incoming display signal, a write control signal and/or a reset signal.

Not only would it have been obvious to the person of ordinary skill in the art at the time the invention was made to combine these references, but also the motivation to combine and/or modify these references is apparent when considering the reasons to follow. The summary of the invention section of the disclosure (Page 2, Lines 16-23), states that one object of the present invention is to provide for an information display device and method that is "capable of preventing a driving voltage from dropping (e.g., during a reset/boot sequence), which avoids

unstability of operation" (emphasis added). Additionally, it is stated that one object of the present invention is to provide for an information display device and method that does not degrade the "performance of the system in a rapid display mode." The Song reference discloses a method of providing an LCD control unit that is capable of discriminating between a reset function of a LCD system (e.g., reset/reboot sequence) and when the LCD system is performing other operations within the system so that the display system does not become "unstable" during its regular operation. In addition, the Song reference states that "it is imperative that the power sequence controller (control unit) is used the LCD system" because the LCD module can be damaged if hardware reset is generated when power is applied to the LCD module.

Since the Kuno reference discloses a display device in which uses such an LCD system as disclosed in the Song reference, their combination would have been obvious to one with ordinary skill in the art at the time of the invention. Their combination also carries a reasonable expectation of success to one with ordinary skill in the art because the feature as disclosed in Song, which is directly applicable to apply to LCD systems as described in Kuno, would be successful in preventing an "unstability of operation" and "degradation of performance in a rapid display mode," as stated as an objective stated in the summary of the invention of this case. The reference Yamazaki does not explicitly specify the term "reset pulse", however, the motivation to modify the mentioned references with Yamazaki is the reflection liquid crystal display device, because of an unnecessary reflection of an ambient light on the liquid crystal panel surface, there arises a problem in that the displayed content is hard to view and that the use efficiency of the ambient light drops. And also by laminating at least one fundamental reflection unit of cholesteric liquid crystal polymer layers having different selective reflection

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wavelength ranges in the visible light region. Kuno and Song do not explicitly disclose the term memory effect, however Kuno's invention discloses a portable display device, but Yamazaki in abstract and in col. 4, lines 24-67 teaches the claim language. And also in col. 30 lines 21-25 teaches that the drive voltage was as low as 3 V, and the current consumption was 0.32 uA for each liquid crystal panel. The battery was exemplified by the lithium cell of CR2025 type and could live three or more years for the energy source of the wristwatch. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Yamazaki into Kuno and Song. The motivation to combine and/or modify these references is apparent when considering the reasons as follows: the reflection liquid crystal display device, because of an unnecessary reflection of an ambient light on the liquid crystal panel surface, there arises a problem in that the displayed content is hard to view and that the use efficiency of the ambient light drops. And also by laminating at least one fundamental reflection unit of cholesteric liquid crystal polymer layers having different selective reflection wavelength ranges in the visible light region.

2. Claim 16.

An information display device according to claim 15, wherein the control section inhibits the storage medium driving circuit from performing an image data reading operation until the display driving circuit completes a display updating operation performed by application of a driving pulse voltage including a reset pulse voltage for resetting a previously displayed image.

See rejection of claim 1.

3. Claim 17.

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An information display device according to claim 15; wherein the display comprises liquid crystal which exhibits a cholesteric liquid crystal phase and makes a display by switching the liquid crystal between a planar state and a focal-conic state. Kuno and Song do not disclose a cholesteric liquid crystal, but Yamazaki in abstract and in col. 4, lines 24-67 teaches the claim language. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Yamazaki into Kuno and Song. The motivation to combine and/or modify these references is apparent when considering the reasons as follows: the reflection liquid crystal display device, because of an unnecessary reflection of an ambient light on the liquid crystal panel surface, there arises a problem in that the displayed content is hard to view and that the use efficiency of the ambient light drops. And also by laminating at least one fundamental reflection unit of cholesteric liquid crystal polymer layers having different selective reflection wavelength ranges in the visible light region.

4. Claim 18.

An information display device according to claim 15, wherein the power source section includes a booster circuit. Kuno in fig. 2B illustrates booster circuit (i.e. battery).

5. Claim 19.

An information display device according to claim 15, wherein the power source section supplies electric power from a battery. See rejection of claim 18.

6. Claim 20.

An information display device according to claim 17, wherein the liquid crystal is capable of making a color display. Kuno in col. 5, lines 60-64 discloses that the selected one of these icons

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is indicated by a color or a positive-negative reversing, so that the user can easily recognize the current setting of the page manipulation mode. And also see Kuno in col. 12 lines 10-41.

7. Claim 21.

An information display device according to claim 15, wherein the display comprises a plurality of screens. Kuno in fig. 1 illustrates the limitation.

8. Claim 22.

An information display device according to claim 15, further comprising an open/close member for setting the display to an open state wherein the display is exposed and to a closed state wherein the display is covered. See rejection of claim 21.

9. Claim 23.

An information display device according to claim 15, wherein the display is capable of displaying intermediate tones. Kuno in fig. 8A illustrates the address controller 13a recognizes the code requiring the widened display contained in the document data and operates in the fine adjustment mode to display the entire figure in the spread format properly as shown in FIG. 8A.

10. Claim 24.

An information display device comprising: a display which is driven by a voltage applied thereto and which has a memory effect; a display driving circuit for driving the display by applying a voltage to the display, the display driving circuit being capable of operating in a first mode wherein the display is updated intermittently and in a second mode wherein the display is updated continuously; at least one peripheral device; a power source section for supplying electric power to the display driving circuit and the peripheral device; and a control section which, in the second mode, inhibits the display driving circuit and the peripheral device,

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respectively, from updating and from operating concurrently, the display updating being performed by application of a driving pulse voltage including a reset pulse voltage for resetting previously displayed information. See rejection of claim 15.

11. Claim 25.

An information display device according to claim 24, wherein the at least one peripheral device is a sound reproducing device for reproducing sound in accordance with information displayed on the display. See Kuno in fig. 1 illustrates a CD item 21.

12. Claim 26.

An information display device according to claim 24, wherein in the second mode, the display is driven by a driving pulse voltage comprising a reset step of resetting a display layer of the display, a selection step of selecting a desired display state and an evolution step of evolving the display layer to evolve to the selected state. Kuno in fig. 1 illustrates different modes.

13. Claim 27.

An information display device according to claim 24, wherein the control section inhibits the peripheral device from operating while the display driving circuit repeats the display updating operation performed by applying a driving pulse voltage including a reset pulse voltage for resetting previously displayed information. See rejection of claim 15.

14. Claim 28.

An information display device according to claim 24, wherein the display comprises liquid crystal which exhibits a cholesteric phase and makes a display by switching the liquid crystal between a planar state and a focal-conic state. See rejection of claim 17.

15. Claims 29 and 30, see rejection of claim 15.

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16. Claim 31.

An information display device comprising: a display which is driven by a voltage applied thereto and which has a memory effect; a storage medium stored with image data to be displayed on the display; a storage medium driving circuit for reading the image data from the storage medium, the storage medium driving circuit comprising a motor for driving the storage medium and a head for reading image data from the storage medium; a display driving circuit for driving the display by applying a voltage in accordance with the image data read from the storage medium; a power source section for supplying electric power to the display driving circuit and the storage medium driving circuit; and a control section which inhibits the display driving circuit and the storage medium driving circuit, respectively, from currently performing a display updating operation and an image data reading operation, the display updating operation being performed by application of a driving pulse voltage including a reset pulse voltage for resetting a previously displayed image to the display. See rejection of claim 15. Kuno in fig. 1 items 20-22 illustrates the storage medium, and it would have been obvious to any person skilled in the art to recognize the requirements for driving the storage medium are as follows: a motor that helps the disk to rotate and heads for reading image data from the disk.

17. Claim 32.

An information display device according to claim 31, wherein the display comprises liquid crystal which exhibits a cholesteric phase and makes a display by switching the liquid crystal between a planar state and a focal-conic state. See rejection of claim 17.

18. Claim 33.

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An information display device comprising: a display which is driven by a voltage applied thereto and which has a memory effect; a display driving circuit for driving the display by applying a voltage to the display; at least one peripheral device, simultaneous driving of the at least one peripheral device and the display driving circuit causing an unstable operation; a power source section for supplying electric power to the display driving circuit and the at least one peripheral device, the power source section including a booster circuit for raising the voltage supplied from a battery; and a control section which inhibits the display driving circuit and the peripheral device, respectively, from performing a display updating operation and from operating simultaneously, the display updating operation being performed by application of a driving pulse voltage including a reset pulse voltage for resetting a previously displayed image to the display. See rejection of claims 15 and 18. The simultaneous driving of the at least one peripheral device and the display driving circuit causing an unstable operation as applicant claims, it would have been obvious to a person skilled in the art to recognize the capability of a processor (a multi-task or a single task processor). A user will experience a delay between the peripheral devices and the display driving, in the case of single task (one task at the time) processor. Kuno, Song and Yamazaki do not explicitly specify the term booster circuit, but the EDN magazine on 1997 published under design ideas a Boost converter controls 12V fan from 5V supply. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of EDN magazine into Kuno, Song and Yamazaki to implement a boost converter that operates from a 5v supply and that varies voltage from 5 and 10v. Their combination also carries a reasonable expectation of success to one with ordinary skill in the art because the feature as disclosed in Song, which is directly applicable to apply to LCD systems as

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described in Kuno, would be successful in preventing an "unstability of operation" and "degradation of performance in a rapid display mode," as stated as an objective stated in the summary of the invention of this case. However the single-chip PWM controller of the EDN magazine

19. Claim 34.

An information display device according to claim 33, wherein the display comprises liquid crystal which exhibits a cholesteric phase and makes a display by switching the liquid crystal between a planar state and a focal-conic state. See rejection of claim 33.

Duplicate Claim

20. Claim 29 objected to under 37 CFR 1.75 as being a substantial duplicate of claim 30.

When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim 29.

An information display device according to claim 24, wherein concurrently driving the at least one peripheral device and the display driving circuit causes an unstable operation.

Claim 30.

An information display device according to claim 24, wherein driving of the at least one peripheral device while the display driving circuit is driving the display causes an unstable operation.

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Examiner's comment: the concurrently driving is similar to one peripheral device while the display driving.

Claim Rejections - 35 USC § 112

21. Claims 29 and 30 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant uses a term “unstable operation” that is difficult to associate it to the invention. For example: A computer or a system causes an unstable (broken or stop working) operation while driving at least one peripheral device (keyboard, mouse, CD, FD, HD or etc.) the same time.

Claim 29.

An information display device according to claim 24, wherein concurrently driving the at least one peripheral device and the display driving circuit causes an unstable operation.

Claim 30.

An information display device according to claim 24, wherein driving of the at least one peripheral device while the display driving circuit is driving the display causes an unstable operation.

Conclusion

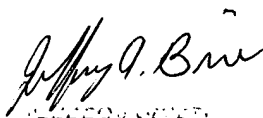
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Javid A Amini whose telephone number is 703-605-4248. The examiner can normally be reached on 8-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on 703-305-4713. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Javid A Amini
Examiner
Art Unit 2672

Javid Amini


JEFFREY A. BRINER
PRIMARY EXAMINER